

Docket No. 251363US2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Takahiro OKUNO, et al.

SERIAL NO: 10/814,246

GAU: 2811

FILED: April 1, 2004

EXAMINER:

FOR: SEMICONDUCTOR DEVICE

**INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97**

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

**REFERENCES**

- ☐ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

**RELATED CASES**

- ☒ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the claims and drawings of the pending application(s) is attached.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

**CERTIFICATION**

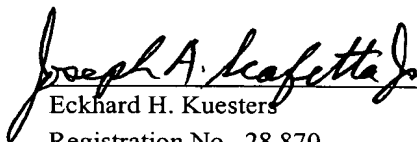
- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

**DEPOSIT ACCOUNT**

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

  
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**LIST OF RELATED CASES**

<u>Docket Number</u>	<u>Serial or Patent Number</u>	<u>Filing or Issue Date</u>	<u>Inventor/ Applicant</u>
208546US2S	09/853,661	05/14/01	TANAKA
227579US2S	10/230,119	08/29/02	TANAKA
232835US2S	10/354,048	01/30/03	YAMAGUCHI et al.
237756US2	10/437,060	05/14/03	TANAKA
243492US2S	10/677,260	10/03/03	TANAKA et al.
251363US2*	10/814,246	04/01/04	OKUNO et al.

\*Present Application; listed for information

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- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

**CERTIFICATION**

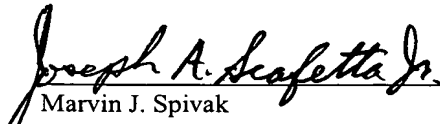
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Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

  
Marvin J. Spivak

Registration No. 24,913

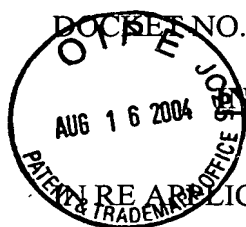
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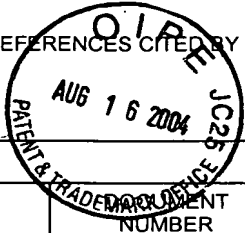
EXAMINER:

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**STATEMENT OF RELEVANCY**

**Reference AO (JP 2003-204066) on Form PTO-1449:**

This reference shows the capacity between gate collectors is reduced without running the effect of accumulation of the carrier in the trench gate type semiconductor device. (Fig. 1-5)

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. <b>251363US2</b>		SERIAL NO. <b>10/814,246</b>	
LIST OF REFERENCES CITED BY APPLICANT  				APPLICANT <b>Takahiro OKUNO, et al.</b>			
				FILING DATE <b>April 1, 2004</b>		GROUP	
<b>U.S. PATENT DOCUMENTS</b>							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						
<b>FOREIGN PATENT DOCUMENTS</b>							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES                  NO		
	AO	2003-204066 (2002-1784)	07/18/2003	JAPAN (with English Abstract)		X	
	AP						
	AQ						
	AR						
	AS						
	AT						
	AU						
	AV						
<b>OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)</b>							
	AW	I. OMURA, et al., IEEE Transactions on Electron Devices, vol. 46, no. 1, pages 237-244, "OSCILLATION EFFECTS IN IGBT's RELATED TO NEGATIVE CAPACITANCE PHENOMENA", January 1999					
	AX	I. OMURA, et al., Proceedings of ISPSD, pages 25-28, "IEGT DESIGN CONCEPT AGAINST OPERATION INSTABILITY AND ITS IMPACT TO APPLICATION", May 25, 2000					
	AY						
	AZ					<input type="checkbox"/> Additional References sheet(s) attached	
Examiner					Date Considered		
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							